

REMARKS

Claims 1, 3-12, 14-15, 17 and 20-22 are pending in the application.

Claims 2 and 13 are cancelled from the application above without prejudice.

Claims 1 and 15 are amended above to more clearly set forth what the Applicant regards as the invention.

Claims 3 and 10-13 are amended to overcome the examiner's section 112 second paragraph rejection.

No new matter has been added to the application by way of these specification and claim amendments.

I. THE SECTION 112, SECOND PARAGRAPH REJECTION

The Examiner rejected claims 2, 3, 8, 11-13 and 15 under 35 USC 112, second paragraph, as being indefinite. It is respectfully considered however that the phrases giving rise to these claim objections are not indefinite because they clearly and distinctly define the subject matter for which protection is sought

The examiner rejected claim 2 alleging the claim phrase "compression of the cylinder by the seismic mass increases stress in the optical fibre . . ." to be indefinite. This feature of claim 2 is incorporated into claim 1 above. The feature refers to original claim 1, which clearly defines the structural features of a seismic mass coaxially constrained within a cylinder of compliant material. Previous claim 2 recites the feature: "compression of the cylinder by the seismic mass increases stress in the optical fibre". Thus claim 1 is definite because the relevant structural features are recited, the structural relationship between the features is recited, and the resultant effect is recited.

Furthermore, this feature is clearly described in the specification as published on page 4, lines 22-31, and with reference to Figure 2. The physical principles on which this feature is based – deformations of bulk materials under pressure – are not unduly complex, and the skilled person, having read the relevant portion of the specification would find the claimed subject matter clear and well defined. The feature is, however, amended above to indicate that the compression referred to in the claim is "axial" compression.

The examiner's objection to claim 3 is overcome by amending the claim to more distinctly claim the invention for which protection is sought. In particular, claim 3 is amended to replace the term "is surmounted with" with the term "includes".

The examiner's claim 8 rejection is traversed. The claim 8 feature that "the base plate is integral with a platform or structure" is described in the specification as published on page 3, lines 17-24. This feature is a simple structural concept, and presents no difficulty to a reader having even a basic mechanical background, let alone a reader skilled in the art to understand. Moreover the term "integral with" has a defined technical meaning, is common in claim language, and clearly defines the scope of the relevant subject matter. For at least these reasons claim 8 is believed to be definite in its current form.

The examiner's rejection of claims 10-12 are overcome by replacing the phrase "arranged in operation to bear on" with the phrase "arranged to bear on". This phrase has a well defined technical meaning in mechanical and structural fields, and clearly and precisely defines the structural relationship between two components.

The alleged indefinite feature of claim 13 of "shaped so as to prevent the one or more cylinders deforming inwardly under axial compression" has now been partially incorporated into Claim 1. Arguments presented above concerning previous Claim 2 apply, and it is respectfully considered that the skilled reader, having available the description and drawings, would immediately understand and clearly be able to distinguish the subject matter claimed as the invention.

The examiner's rejection of claim 15 is overcome by amending the claim to define the claimed scope of invention more precisely. The currently claimed features are described on pages 4 and 5 of the published description with reference to Figure 2 in particular.

II. TRAVERSE OF THE ANTICIPATION REJECTION

Claims 1-15, 17 and 20-22 stand rejected under 35 USC 102(b) as being anticipated by Thomas (WO 03/081186).

In order for a reference to anticipate, the reference must show the same invention in as complete a detail as claimed. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Moreover, the elements must be arranged in the reference as

required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). Claims 1, 3-12, 14-15, 17 and 20-22 are not anticipated at least because Thomas does not disclose a device as set forth in independent claims 1 and 15 whereby axial compression of the device cylinder by the seismic mass increases stress in the optical fibre. In addition, independent claim 21 is novel and patentable at least because Thomas does not disclose a device “wherein the internal surface of said cavity is constrained against radial displacement” as required by claim 21.

By way of brief review, Thomas describes a fibre optic accelerometer having a mass contained within a flextensional body in the form of a concave tapered cylinder. Optic fibre is wound circumferentially around the tapered cylinder. Thomas explains, at page 6, lines 26-36 and at page 7, lines 34-35 that radial deformation of the concave cylinder occurs under axial displacement because of the shape function and geometry of the concave cylinder. It would be immediately apparent to one skilled in the art at the time of the invention that, because of the concave shape taught in Thomas, compression of the cylinder by the seismic mass in Thomas will result in a decrease in tension in the optic fibre. Thus Thomas does not disclose the feature of claim 1 that axial compression of the cylinder by the seismic mass increases stress in the optical fibre. It is for at least this reason that independent claim 1 is not anticipated by Thomas.

Independent method claim 15 includes a corresponding feature, and for the same reasons, claim 15 is also not anticipated by Thomas. Likewise, claims 3-12, 17 and 20, which depend upon claim 1 or 15 are not anticipated by Thomas at least by virtue of their dependence upon allowable claims 1 or 15.

Claim 21 recites the feature: “wherein the internal surface of said cavity is constrained against radial displacement” which is not found in Thomas. Looking at Thomas, for example Figures 2 and 4, it can clearly be seen that there is nothing preventing the internal surface of concave cylinder 12 from deformation – an area of free space exists between cylinder 12 and mass 23. This is completely unsurprising, since in order for the device of Thomas to function as described, the internal surface of the cylinder must be free of obstruction to allow the cylinder to deform inwardly under axial compression of the cylinder. Thus independent claim 21, and claim 22 which depends upon claim 21 are novel at least because the referenced feature of claim 21 above is absent from Thomas.

CONCLUSION

All pending application claims are believed to be ready for patenting for at least the reasons recited above. Favorable reconsideration and allowance of all pending application claims is, therefore, courteously solicited.

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